

REMARKS/ARGUMENTS

Reconsideration of the current patent application, as amended after final rejection, is respectfully requested.

All previously pending claims 1-20 were rejected. Accordingly, independent claims 1 and 13 have been amended and new claims 21-28 have been added.

Specifically, claims 1 and 8-12 were rejected under 35 U.S.C. §103(a) as being obvious over the combination of the previously cited U.S. Patent 4,701,011, which issued October 20, 1987 to W. L. Emkey *et al.*, in view of the previously cited U.S. Patent 6,014,483 which issued January 11, 2000 to M. Thual *et al.*, and newly cited U.S. Patent 5,037,180, which issued August 6, 1991 to J. Stone.

The applicant has amended independent claim 1 to better reflect his invention. As amended, claim 1 has "...a fourth multimode optical fiber segment attached to said third multimode optical fiber segment,...said fourth multimode optical fiber segment having an endsurface opposite said third multimode optical fiber segment facing said endsurface of said second multimode optical fiber segment and abutting said plurality of dielectric coatings on said endsurface of said second multimode optical fiber segment...". That is, except for the dielectric coatings of the wavelength-dependent optical filter, there is no separation between the second and fourth multimode optical fiber segment. See applicant's Fig. 1A, for example.

The teachings of the cited Emkey, Thual and Stone patents are contradictory and the combination of these references appear to be based upon hindsight toward the applicant's teachings. The Emkey patent, which is cited for providing the basic organization of the applicant's claimed invention, teaches that the input fiber 12_I and fused multimode fiber-lens 16_I should be separated from the multimode fiber-lens 16_O fused to the output fiber 12_O, as shown in Fig. 6. Emkey *et al.* state, "Convergent beam I' subsequently passes a distance X through optical component 30, which may in fact comprise a number of optical components." Col. 5, lines 43-45. The Thual patent, as understood by the applicant, is directed toward the same goal of separating the optical fibers and their attached graded index and silica sections. For example, Thual *et al.* state, "For fiber-to-fiber connections applications, it is desired to increase the size of fiber output mode in order to relax positioning tolerances, while increasing the working

distance.” Col. 5, lines 22-24. Such a fiber-to-fiber connection is described, “The example shown in Fig. 5 involves only graded-index multimode fiber sections; the addition of silica sections makes it possible to increase the distance between the ribbons, from about a hundred microns to several millimeters.” Co. 7, lines 16-20.

The Stone patent teaches the deposition of thin film layers on the end facet of single-mode optical fibers with an end facet of a second single-mode fiber against the thin film layers. However, there is no teaching that multimode fiber segments might be attached to ends of the single-mode optical fibers and that thin-film layers should be deposited on the end facets of the multimode fiber segments. It is noteworthy that the Emkey patent issued more than two and half years prior to the filing of the Stone patent and that both the Emkey and Stone patents originated from the same entity, AT&T Bell Laboratories of Murray Hill, New Jersey. Yet Stone makes no mention of the advantages of the addition of multimode fiber segments. Hence the combination of these references to reach the claimed invention of claim 1 appears to be artificial and portions of the cited prior art are selected based upon impermissible hindsight.

Claim 1 as amended is not obvious over these references and should be allowable. Claims 2-12 should also be allowable for at least being dependent upon an allowable base claim.

Claims 13-18 were rejected under 35 U.S.C. §103(a) as being obvious over the combination of the Emkey *et al.* patent in view of the Thual *et al.* patent and previously cited U.S. Patent 6,280,099, which issued August 28, 2001 to Y. Wu. In explaining the Wu patent, the Examiner states, “Wu discloses a wavelength filter comprising a plurality of dielectric coatings 9 deposited on an end of an optical fiber segment for forming a wavelength-dependent optical filter. It would have obvious to provide a plurality of dielectric coatings of Wu on the end of the multimode fiber segment in place of element 30 of Emkey *et al.* to provide a wavelength filter having improved coupling efficiency and reduced size.”

Independent claim 13 has also been amended to better point out the applicant’s invention and distinguish itself from prior art. As amended, claim 13 recites the step of “depositing a plurality of dielectric layers directly upon an end surface of said second multimode fiber segment (underlining added).” The Wu patent teaches an indirect mounting of the dielectric coatings to

the end surfaces of optical fibers; the dielectric coatings are first deposited on a glass substrate which in turn is mounted to the end surface of an optical fiber. The “arranging and orienting” step of claim 13 was also amended so that “so that said fourth multimode fiber segment abuts said plurality of dielectric layers...”. As argued above, the Emkey and Thual patents teach the separation of the input and output optical fibers with their attached multimode optical segments, contrary to the Wu arrangement. As the applicant has pointed out, the selective combination of certain portions of the prior art and the discarding of other portions to reach the applicant’s claimed invention suggests the impermissible use of hindsight based upon the applicant’s teachings.

Hence independent claim 13 is not obvious over the combination of the cited references and should be allowable. Claims 14-20 should also be allowed for at least being dependent upon an allowable base claim.

New method claims 21-28 were added in response to the rejection of claims 19 and 20 under 35 U.S.C. §103(a) as being obvious over the combination of the Emkey *et al.* patent in view of the Thual *et al.* patent and the Wu patent, and further in view of previously cited U.S. Patent No. 5,134,470, which issued July 28, 1992 to R. G. Ravetti. That is, the same arguments made above with respect to the Emkey, Thual and Wu patents are applicable here. The method claims also to address the Examiner’s comments in paragraph 28 of the most recent Office Action which respond to the applicant’s arguments in the previous Amendment filed November 3, 2003. Claim 21 has the steps of:

“forming metal coatings over predetermined portions of first and second optical fiber end sections;

...

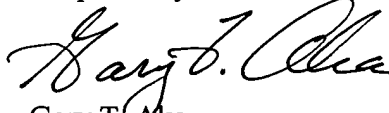
arranging and orienting said first metal-coated optical fiber end section and fixed first and second multimode fiber segments with said second metal-coated optical fiber end section and fixed third and fourth multimode fiber segments in a metal sleeve so that said fourth multimode fiber segment abuts said plurality of dielectric layers and so that light from a core of said first optical fiber

end section passing through said plurality of dielectric coatings enters a core of
said second optical fiber end section (underlining added).”

These steps cannot be performed with the contradictory teachings of the Wu and Ravetti patents. The metal sleeve disclosed by Ravetti does inhibit the actions of the ultraviolet rays of Wu manufacturing techniques since the fibers are mounted in a metal sleeve which is presumably opaque to UV rays. Hence independent claim 21 patentably distinguishable over the cited prior art and should be allowed. Claims 22-28 should be allowable for at least being dependent upon an allowable base claim.

Therefore, in view of the amendments above and the remarks directed thereto, the applicant respectfully requests that the rejections be withdrawn, that claims 1-28 be allowed and the case passed to issue. If a telephone conference would expedite the prosecution of the application in any way, the Examiner is invited to call the undersigned attorney at (408) 446-7687.

Respectfully submitted,



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